

The listing of Claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Original) A method for detecting biomolecules *in vivo*, the method comprising:  
providing labeled binding molecules *in vivo* to tissue having biomolecules, wherein the labeled binding molecules specifically binds the biomolecules;  
emitting a first optical radiation into the tissue *in vivo* to excite the labeled binding molecule bound to the biomolecule *in vivo*; and  
detecting, *in vivo*, a second optical radiation emitted by the excited labeled binding molecule in response to the excitation thereof.
2. (Original) A method according to Claim 1, wherein the labeled binding molecules are fluorescently labeled antibodies.
3. (Original) A method according to Claim 1, wherein the biomolecule is a tumor-associated antigen.
4. (Original) A method according to Claim 1, wherein the biomolecule is a sigma-2 receptor.
5. (Original) A method according to Claim 1, wherein the detecting step comprises transmitting a signal associated with the second optical radiation to an *ex vivo* system.
6. (Original) A method according to Claim 1, wherein the step of exciting comprises emitting the first optical radiation through a bio-fouling tissue.